



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 09/460,965 | 12/14/1999 | NING XUE | 99-222 | 3179 |

24319 7590 10/12/2004

LSI LOGIC CORPORATION
1621 BARBER LANE
MS: D-106 LEGAL
MILPITAS, CA 95035

EXAMINER

WERNER, BRIAN P

| ART UNIT | PAPER NUMBER |
|----------|--------------|
|----------|--------------|

2621

DATE MAILED: 10/12/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/460,965

Applicant(s)

XUE, NING

Examiner

Brian P. Werner

Art Unit

2621

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 July 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on July 6, 2004 has been entered. The following is noted:

The specification and claim amendments have been entered;

The previous 112, written description rejection is withdrawn; and

Claims 1-24 are currently pending.

Specification

2. The following items appear to require correction:

Specification page 2, line 27, "video system 110" should be "100"; and

Specification page 7, line 7, "Fig. 300" should possibly be "Fig. 3".

A review of the specification for other minor errors is suggested.

Claim Objections

3. The following quotations of 37 CFR § 1.75(a) is the basis of objection:

(a) The specification must conclude with a claim particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention or discovery.

4. Claims 1, 8, 15 and 19 are objected to under 37 CFR § 1.75(a) as failing to particularly point out and distinctly claim the subject matter which the applicant regards as his invention or discovery. In claim 1, at line 7, the element, "the calculated average mean and average variance" lacks antecedent basis in the claim. From the phrase, it would appear that an average mean and variance had already been calculated. However, this is the first recitation of these elements in the claim. Claims 8, 15 and 19 are objected to for the same reason.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6. Claims 1, 8, 15 and 19 (as well as all the dependent claims) are rejected under 35

U.S.C. 112, first paragraph, because the specification, while being enabling for:

determining whether the predetermined is satisfied based on the calculated average mean and variance values for two sub-blocks separated by the boundary;

does not reasonably provide enablement for:

determining whether the predetermined is satisfied based on the calculated average mean and variance values for any image content, of any size, anywhere in the image.

The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the invention commensurate in scope with these claims. Currently, the scope of the claims covers the calculation of average mean and variance values of anything, anywhere. However, the invention will not work for example if, for purposes of determining whether the predetermined condition is satisfied, average mean and variance values are calculated in a 4 X 4 block of pixels, located in the upper left-hand corner of the image. Why – because this image content may have nothing to do with the content of the currently processed blocks for which pixel recalculation may be required.

Suggestion

7. The following suggestion is made for overcoming the Rule 75 objection above, as well as the 112 rejection:

Determining whether a predetermined condition is satisfied, wherein the predetermined condition is based upon [the calculated] calculating average mean and average variance values of said two or more sub-blocks;

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(c) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

9. Claims 18 and 20 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Fukuda (US 5625714 A).

Regarding claims 18 and 20, Fukuda discloses:

means for reading a video (figure 1, block 11; "... 11 receives compressed image data" at column 4, line 42);

means for filtering the video so that blocking in the video is reduced (figure 1, block 16; "removing block distortion" at column 1, line 15; "filtering" at column 5, line 40); and

means for displaying the video filtered by the filtering means on a display (figure 1, numeral 17; "image display" at column 5, line 3).

Regarding claim 20 specifically, the blocks depicted in figure 1 are circuits (e.g., "transform circuit 13" at column 4, line 67).

Art Unit: 2621

Means + Function Notes:

- Fukuda discloses a series of processing blocks, or circuits at figure 1 which are equivalent in structure to the processing blocks, or circuits disclosed in applicant's figure 1).
- The "means for displaying" element of claim 20 does not invoke 112, sixth paragraph because the limitation is modified by structure (i.e., "on a display"). However, the limitation is still met by the prior art.
- Claim 20 un-invokes 112, sixth paragraph because it adds the structural limitation of a "circuit". However, the limitation is still met by the prior art.

Allowable Subject Matter

10. Claims 1-17 and 21-23 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, and the Rule 75 objection set forth in this Office action. Claims 19 and 24 would be objected to as depending from a rejected base claim. For allowability, the following is suggested:

- Incorporate the suggestions (or equivalent) set forth above for overcoming the 112 rejections and Rule 75 objections; and
- Introduce the elements of claim 19 into claim 18 (or vice versa).

Art Unit: 2621

11. The following is a statement of reasons for the indication of allowable subject matter:

The prior art does not teach or suggest recalculating a boundary pixel based on the satisfaction of a condition, where the condition is based on calculated average mean and average variance values of blocks separated by a boundary, and where the average variance is calculated based on an approximation using a piece-wise linear estimate. These limitations in combination with the other claim elements serve to remove block artifacts in an image “during normal speed display and to maintain a higher quality of slower speed and freeze playback” (specification page 9, line 12-13).

Conclusion

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Yuk-Hee Chan (A Practical Postprocessing Technique for Real-Time Block-Based Coding System) is pertinent as teaching block division and boundary pixel recalculation (figures 1-3).

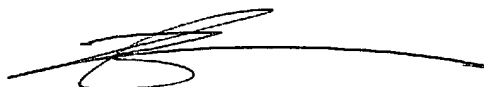
13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian P. Werner whose telephone number is 703-306-3037. The examiner can normally be reached on M-F, 8:00 - 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Leo H. Boudreau can be reached on 703-305-4706. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2621

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Brian Werner
Primary Examiner
Art Unit 2621
October 8, 2004



BRIAN WERNER
PRIMARY EXAMINER